

GRADUATION ASSIGNMENT: WARM HAND

Background information

TSG Group is involved in engineering projects in the field of product and machine development. We develop complete products, standalone machines, mechanizations and tools and also improve and optimize products and processes.

Assignment

Medical specialists have to deal with all kinds of people during surgery in hospitals. It is very important that patients are feeling relaxed and comfortable. This behavior reflects in the overall procedure time, and thus efficiency.

WARM HAND offers medical specialist a product to use for their patients during procedures. The products provides functionality mimicking that someone holds your hand. The patients hand (left or right) is put on the product and the inner side and/or as well as outer side of the patients hand is 'held' and warmed.

The product is not a reproduction of a real hand but can be designed in an abstract and/or iconic way. Temperature can be set from 25° to 40° C with top and bottom side separated in setting. It must be possible to fixate the patients hand in a simple way to avoid the hand and wrist from falling down. Also take space into account for presence of a infusion or drip. Make the design suitable for left and right hand use in one geometry. The product design should also, as best possible, follow circular design principles (such as those from the Ellen MacArthur Foundation). Since hygiene and avoidance of contamination is important in medical applications, take this into account in your concept and usage of the product. Of course also usability for the medical practitioner is important and comfort for the patient.

Parts of your assignment:

- Assessment and analysis.
- Drawing up requirements, preconditions and criteria.
- Conceptualization + ranking for concept choice.
- 3D CAD engineering with static and dynamic calculations.
- Ergonomics & usability.
- Design study and visualizations.
- Sustainability.
- Report with conclusions and recommendations.



About the company

[Total Support Group](https://www.tsggroup.nl) is an engineering company based in Brainport region Eindhoven and material campus Brightlands Chemelot in Geleen. With approximately 100 employees we have a focus on projects in the field of development of new products, special machines and tools from industrial design to engineering, analysis (FEM, CFD) and industrialization. We have a workshop where special machines and test setups are realized and where prototypes / demonstrators and zero series are manufactured. TSG Group is working for third party companies, including multinationals, SMEs and startups.



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